



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/944,338	08/31/2001	Thomas Kircher	9256-24	1860

23973 7590 12/18/2002
DRINKER BIDDLE & REATH
ONE LOGAN SQUARE
18TH AND CHERRY STREETS
PHILADELPHIA, PA 19103-6996

EXAMINER

OLTMANS, ANDREW L

ART UNIT	PAPER NUMBER
----------	--------------

1742

DATE MAILED: 12/18/2002

8

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/944,338

Applicant(s)

KIRCHER, THOMAS

YB

Examiner

Andrew L Oltmans

Art Unit

1742

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 October 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) 8 and 9 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 6 and 7 is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☒ Claim(s) 5 is/are objected to.
- 8) ☒ Claim(s) 1-9 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Claims 8-9 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in Paper No. 7, filed October 14, 2002.

Applicant's traversal has been considered, but has not been found persuasive. First, the examiner disagrees with applicant's assertion that the restriction incorrectly identified the relationship between the groups as product and process of use. Applicant claims that the correct relationship is process and product made. The examiner maintains that the correct relationship is the one in the previous Office action wherein the groups are related by product and process of use. It is noted that claim 8 is an article, which does not have an aluminide coating (a requirement for the article to be made by the process of claims 1 or 6). The article of claim 8 is only a metal substrate having a coating tape disposed over the claimed space. The language "whereby upon heating... an aluminide coating is formed" does not limit the article to an aluminide coated material, but rather describes a pre-assembly article not having an aluminide coating. Therefore, applicant's arguments drawn to the inventions being related by process of making and product made are moot. The examiner maintains the position in the previous office action:

Inventions II and I are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case, the product as claimed can

be used in a materially different process of using that product, such as using the article in such as way as to bond the coating tape using an adhesive material to the substrate material to form a coated material.

Claim Rejections - 35 USC § 103

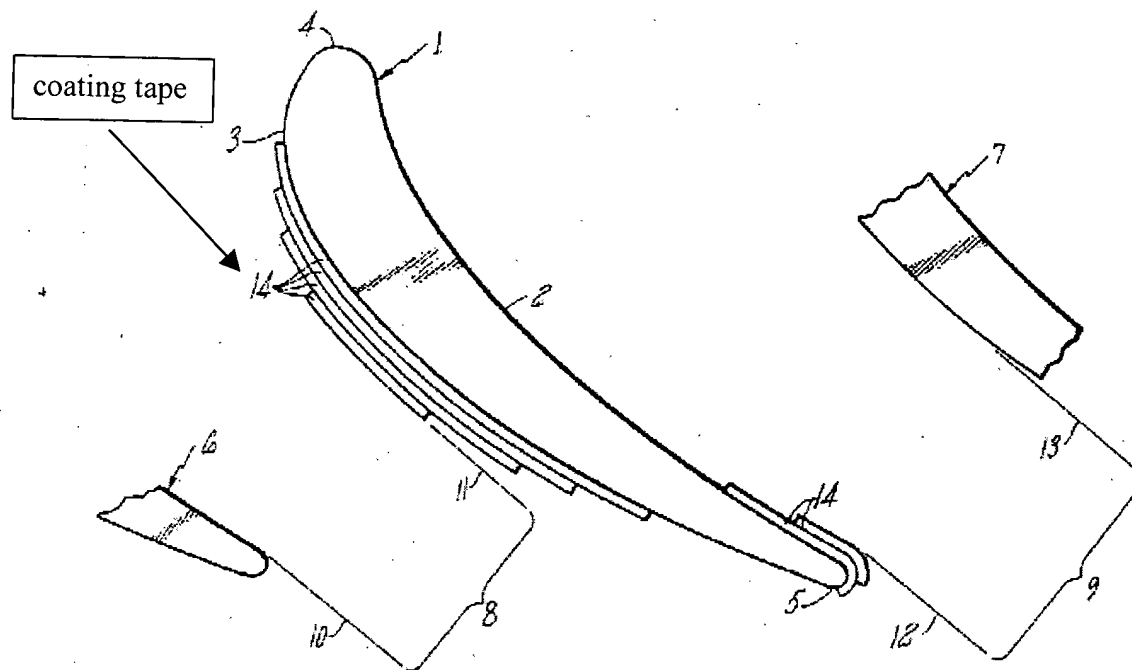
2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Draghi et al. 4,726,101 in view of Olson et al. 6,045,863

3. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Draghi et al. 4,726,101 (Draghi) in view of Olson et al. 6,045,863 (Olson; cited on IDS filed August 31, 2001).

Draghi teaches a method of repairing cracks and defects in gas turbine engine parts, including turbine vanes (col 1, lines 7-9 and col 2, lines 39-46). Draghi teaches that during service vane surface deteriorate and form cracks or other surface defects (i.e. substrate surfaces bounding a contained space of the substrate), as recited in instant claim 1 (col 1, lines 40-54 and col 4, lines 44-49). Draghi teaches that a tape of coating material is applied to the vane over the cracked area (i.e. enclosing the contained space (i.e. the crack) in an out-of-contact relation with the target surface (i.e. crack surface)), wherein the tape can be applied in multiple layers, as recited in instant claim 1 (col 4, lines 54-64) and (FIGURE):



[emphasis added by examiner]

Draghi teaches that the vane is heated and the binder and adhesive decompose so as to leave no residue and the tape provides a unitary thickened surface wherein the tape material fills in the crack in the covered area (col 4, line 64 to col 5, line 5), as recited in claim 1.

Draghi fails to meet all the limitations of the instant claims in that Draghi does not explicitly teach the tape composition instantly claimed in claims 1-4.

Olson teaches an aluminide coating tape for use on various metallic substrates, including nickel-based superalloy gas turbine engine blades and vanes (col 3, lines 43-47). Olson further teaches that the tape includes a binder, a halide activator, an aluminum source and an inert ceramic filler material, as recited in claim 1 (col 3, lines 52-55). Olson teaches that the halide

Art Unit: 1742

activator includes LiF, as recited in instant claims 3 and 4 (col 4, line 8). Olson teaches an example including the claimed mixture and binder (col 6):

A low activity, outwardly diffusing localized aluminide coating was produced by the following: First, 65.1 wt. % aluminum oxide, 28.2 wt. % chromium aluminum, 0.9 wt. % aluminum tri-fluoride, and 5.7 wt. % polytetrafluoroethylene were mixed together and manufactured into tape form. The thickness of the tape was 0.030 inches (0.076 cm).

inert material

aluminum source

activator

binder

[emphasis added by examiner]

The amount of aluminum source in the mixture (i.e. aluminum source and activator) is encompassed by the range of aluminum claimed in instant claim 1 (col 6, line 36-39). The amount of aluminum in the aluminum source (i.e. the Cr-Al alloy) is encompassed by the range of aluminum claimed in claims 1 and 4 (col 4, lines 36-49). Olson teaches that the coating method results in a variety of desirable surface properties (col 6):

The low activity, outwardly diffusing localized aluminide coatings of the invention have excellent resistance to thermal fatigue cracking as well as excellent resistance to oxidation degradation. These coatings can be applied much thinner than high activity, inwardly diffusing localized alu-

[emphasis added by examiner]

(col 7):

minide coatings. The invention also has greater thermal fatigue resistance than that of a high activity, inwardly diffusing localized aluminide coating. Thus, the invention is much more desirable for certain applications such as reducing the propensity for crack formation in superalloy articles of gas turbine engines.

[emphasis added by examiner]

One of ordinary skill in the art at the time that the invention was made would have been motivated to use the tape of Olson as the tape in Draghi in order to provide Draghi with all of the desirable surface properties taught by Olson, including thermal resistance to thermal fatigue cracking, excellent resistance to oxidation degradation, thinner coating, greater thermal fatigue resistance and reduction in propensity for crack formation in superalloy articles of gas turbine engines (Olson: col 6, line 63 to col 7, line 6)

Allowable Subject Matter

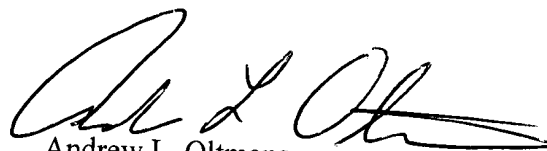
4. Claim 5 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
5. Claims 6-7 are allowed.
 - a. A primary reason for allowance of claim 5, under the above conditions, is that the prior art fails to teach or suggest, either alone or in combination, the instantly claimed method wherein the method further comprises the step of disposing a masking material onto an area of the metal substrate that is laterally adjacent to the contained space and not within the contained space, as instantly claimed.
 - b. A primary reason for allowance of claims 6-7 is that the prior art fails to teach or suggest, either alone or in combination, the instantly claimed method wherein the method includes the steps of positing the claimed tape over a contained space wherein the tape is in an out-of-contact relation with the target surface, disposing the claimed slurry coating composition on the tape and heating the target to the claimed temperature.

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew L. Oltmans whose telephone number is 703-308-2594. The examiner can normally be reached 8:30-5:00 Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on 703-308-1146. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-873-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.



Andrew L. Oltmans
Examiner
Art Unit 1742

December 11, 2002